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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,961	02/28/2004	Peter M. Kowalik	2004CP2	6693

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EXAMINER	
FISHMAN, MARINA	

ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/788,961	KOWALIK ET AL.	
	Examiner	Art Unit	
	Marina Fishman	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2, 5 –12, 15, 17 – 20, 22 - 54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-30 and 32* is/are allowed.

6)☐ Claim(s) *2,5-12,15 and 17-20,31,33-42,44-51,* is/are rejected.

7)☒ Claim(s) *43 and 52-54* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

General status

1. This is a Final Action on the Merits. Claims 2, 5 –12, 15, 17 – 20, 22 - 54 are pending in the case and are being examined.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 49 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "principally comprises", recited in Claim 49, is the relative term, which renders the claim indefinite.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 5 – 12, 15, 17 – 20, 31, 33, 34, 39, 40, 48 – 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demissy [US 5,369,234] in view of Cline [US 4,080,643].

6. Regarding Claims 2, 5, 48 and 49 Demissy [Figure 1-13], discloses a whip for an arc-extinguishing device, comprising a first tapered flexible rod [16] with a tip and a blunt end. However, Demissy does not disclose the rod to be nonmetallic and also a conductive path on a length of the first rod surface. Cline [Figures 1-3] discloses a discharge rod made from fiberglass material [Column 3, lines 12-20] with conductive carbon coating on the exterior surface as well as a conductive ribbon with metallic aluminum particles on the outer surface [Column 3, lines 13-20; Column 4, lines 1-4]. Demissy also discloses use of epoxy (resin) and carbon mixture. It would have been obvious to one having ordinary skill in the art at the time the invention was made to non-conductive rod, with conductive outer surface in Demissy, as suggested by Cline in order to make whip with relatively low coefficient of thermal expansion and stable resistance [Cline, Column 1, lines 50-55].

Regarding Claim 6, use of fiber reinforced plastic is well known in the art, and therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use fiber reinforced plastic in place of nylon as a rod material so as to achieve better strength. Regarding claims 7 and 8, the conductive ribbon of Cline comprises epoxy adhesive and is applied to the outer surface, making the outer surface of the rod conductive. The conductive ribbon is taken as metal braid.

Regarding Claims 9 –12 and 31 Cline discloses the rod made from two parts, first metal portion [22] with blunt end and a second rod [20] with conductive outer surface, and both are in contact with each other. Regarding Claim 11, the second part being made from nylon, has different composition than the first part. Cline also discloses the

taper extending from a largest end of first part (middle of part 22) to the end of the second part [20]. Cline discloses a gap between the conductive portion [60] of the second part and the all metal first part [22]. It would have been obvious to one of ordinary skill in the art to modify the rod of Demissy as suggested by Cline between the first and second metal parts to achieve electrical continuity. Regarding Claim 12, Cline discloses a conductive rod [40] in the second part [20], the conductive rods serves as a spine.

Regarding Claim 15, 17, 18, 19 and 50 though the second part is not disclosed with spine having taper in the direction of the taper of the rod or the material to be spring steel. It would have been obvious to provide tapered spine and make the spine out of spring steel, so as to adjust to outer surface of the second part and to add the strength to the joint. Regarding Claim 19, since the second part is composed of metal and non-metal components, it will have greater specific strength.

Regarding Claims 20, 51, Demissy and Cline discloses the claimed invention except for fiber reinforced plastic and beryllium copper as materials for the second part. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use beryllium copper for spine and fiber reinforced plastic for non-metal part, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice [In re Leshin, 125 USPQ 416].

Regarding claim 33, Demissy, discloses an air break switch comprising: first and second main switch contacts [3, 6] movable relative to each other to produce a switch

opening or a switch closing, a whip and a latch [16, 17] conductively connected with respect to one of the main switch contacts, the whip having a structure including, at least in a tip-end portion that is last to separate from the latch [Figure 6] in a switch opening. However, Demissy does not disclose whip being made from non-metal rod with conductive path comprising at least one conductor selected from the group consisting of metal braid, a metal foil, a metal sheath and a metal wire. Cline [Figures 1-3] discloses a discharge rod made from fiberglass material [Column 3, lines 12-14] with conductive carbon coating on the exterior surface as well as a conductive ribbon on the outer surface [Column 3, lines 13-15; Column 4, lines 1-4]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to non-conductive rod, with conductive outer surface in Demissy, as suggested by Cline in order to make whip with relatively low coefficient of thermal expansion and stable resistance [Cline, Column 1, lines 50-55]. Cline discloses a gap between the conductive portion [60] of the second part and the all metal first part [22], it would have been obvious to provide continuity between the first and second metal parts to achieve electrical continuity.

Regarding claim 34, use of fiber reinforced plastic is well known in the art, and therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use fiber reinforced plastic in place of nylon as a rod material so as to achieve better strength.

Regarding Claims 39 and 40, the whip has initial contact region [Figure 9] that is first to contact the latch during switch opening and closing, this region, due to its

proximity to the pivot point will be a non-metal region [base of part 60, close to part 22] of Cline and hence has relatively high weight and durability and for claim 40, the initial contact region has conductive metal 60 and the second part is made from non-metallic material. The selection of fiber-reinforced plastic is discussed above.

7. Claims 35, 38, 41, 42, and 44 - 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demissy [US 5,369,234] in view of Cline [US 4,080,643] and Outlaw et al. [US 3,955,303].

Regarding Claims 41, 42, 44, 46 and 47, Demissy and Cline discloses all the claim limitations, except for whip made from one or more additional non-conductive rods. Outlaw et al. [Figure 1] disclose a hollow telescoping fiberglass rod with a plurality of segments. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use telescoping fiber glass rod, with conductive outer surface in Demissy, as suggested by Cline and Outlaw et al., in order to make extendible whip with relatively low coefficient of thermal expansion and stable resistance [Cline, Column 1, lines 50-55].

Regarding claims 35, 38 and 45, Demissy, Cline and Outlaw et al. disclose all the elements of the invention except use of wheel with latch for contact with the whip rod assembly. Use of wheel for reducing mechanical friction is well known in the art and therefore, it would have been a matter of design choice to use wheel with the latch and provide groove in the wheel to guide the whip rod assembly, so that during operation of the switch, the whip rod assembly can quickly slide against the wheel for quick disconnection.

Allowable Subject Matter

8. Claims 22-30 and 32 are allowed.

Regarding Claim 22, the prior art of record does not teach or suggest, in combination with the claimed elements, a second contact element that includes a rod portion having an end proximate to which there is joined with the rod portion a first end of a pin on which a roller, with an outer rim, is located and free to rotate, a second end of the pin being joined with a cam bar, the rod portion, pin, roller, and cam bar all being electrically conductive.

Regarding Claim 27, the prior art of record does not teach or suggest, in combination with the claimed elements "the latch including conductive members comprising a rod portion connected at one end with the other of the contacts and having a second end proximate to which a pin is attached to the rod portion with a roller free to rotate thereon, the latch further comprising a cam bar attached to the pin on a side of the roller opposite the rod portion."

9. Claims 43, 52, 53 and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 43 and 52, the prior art of record does not teach or suggest combination of elements including "the latch also includes a conductive latch camming surface in an arrangement with sliding conductive engagement, during a switch closing, between the whip and the latch camming surface and rod without contact of the whip with the wheel."

Response to Arguments

10. Applicant's arguments filed 01/24/2005 have been fully considered but they are not persuasive.

Applicant has argued "a replacement of metal rod in Demissy with a rod like Cline's is not obvious and not anything that would satisfy the claims. Applicant has further argued that "Cline's aircraft static discharge ha a rod member 40 with a baked on conductive coating 41 without any suggestion of ant strands or interstitial locations between strands. Examiner respectfully disagrees. The recitation in Claim 48, "one or more metal conductors including metal strands bonded to the rod surface by an adhesive at interstitial locations between the metal strands" are satisfied by the Cline reference, as the Cline reference [column 4, lines 1-11] discloses a lightening diverter strip in the form of ribbon [60] containing aluminum powder applied to an epoxy substrate, suggests that the conductors are in the form of ribbon, hence is in the form of strips or stands and are "applied" to the substrate, meaning that they are adhesively bonded to the exterior surface and hence the interstitial spaces between the strands will be filled with the adhesive, thereby satisfying the claim limitations.

As to the remark that it is "not obvious to combine", Examiner would like to point out that the motivation to combine can come from any or all of the three sources: the suggestion from the references, the nature of problem to be solved and knowledge of one of ordinary skill in the art. In this case, Cline reference [column 1, lines 50-57] cites "a fiber glass rod coated with a conductive carbon coating and cured at high temperature provides a highly predictable and stable resistance element. Also, fiber

glass has a relatively low thermal coefficient of expansion, and the conductive and cured coating applied to the exterior surface thereof maintains its integrity in use over a wide range of temperatures, and can predictably made at low cost." The elements pointed out in this passage, such as "highly predictable and stable," "relatively low coefficient of thermal expansion," and "maintaining integrity over a wide range of temperatures," all are highly valuable for a whip operating in high voltage environment and one of ordinary skill in the art would be motivated to combine the fiberglass rod with conductive exterior of Cline with the device of Demissy to obtain all the benefits that are offered by the fiberglass rod.

Applicants comment regarding claims 9, 10 and 11, 12 are also noted. Despite the fact that the claims are directed to the embodiment of figures 2A, 2B and 10-12 respectively, of Applicant's invention, the limitations in these claims are broad enough to read on combination of Demissy and Cline. Examiner in the body of the rejection above has addressed all other rejected claims with their respective limitations.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Fishman whose telephone number is 571-272-1991. The examiner can normally be reached on 7-5 M-T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marina Fishman
March 3, 2005

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